

Smokeless Tobacco, Cigarettes, and Dual Product Use: Implications for Dissolvable Tobacco Product Marketing

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Possible mechanisms for in reducing population harm from smoking:

- Perhaps dissolvable tobacco products could reduce population harm from smoking by:
 - Preventing smoking initiation
 - Fostering smoking cessation
 - Reducing cigarette consumption among continuing smokers
- Could escalate population harm by:
 - Appealing to young people
 - Delaying smoking cessation
 - Promoting relapse
- Lessons from snus and moist snuff?

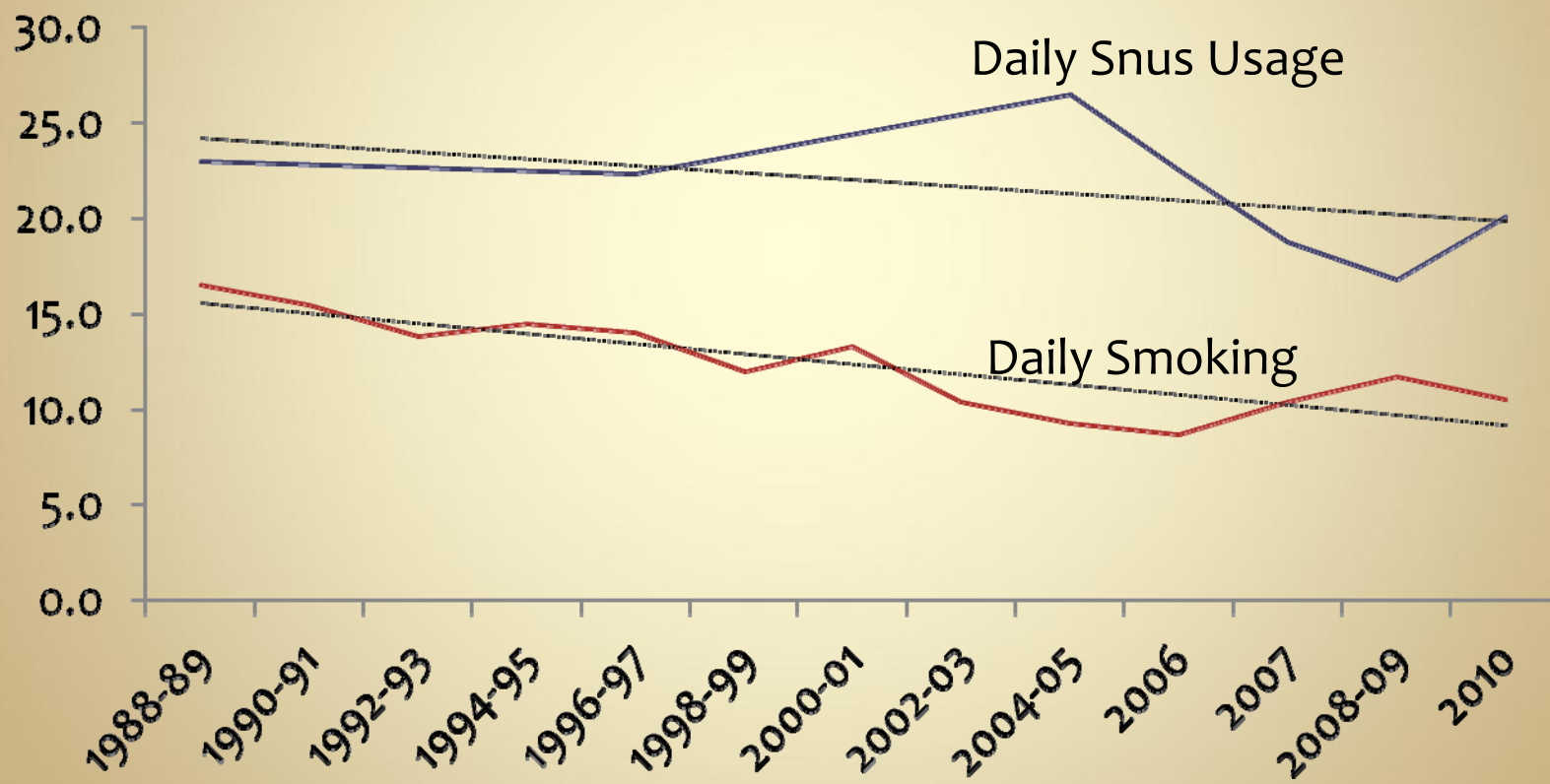
Objectives

- Review epidemiological data on patterns of ST usage and consumption in relation to cigarette smoking
- Review recent randomized clinical trials of ST as smoking cessation strategy
- Discuss implications of these data

ST use as “Preventive” for Smoking Initiation: Epidemiologic Patterns

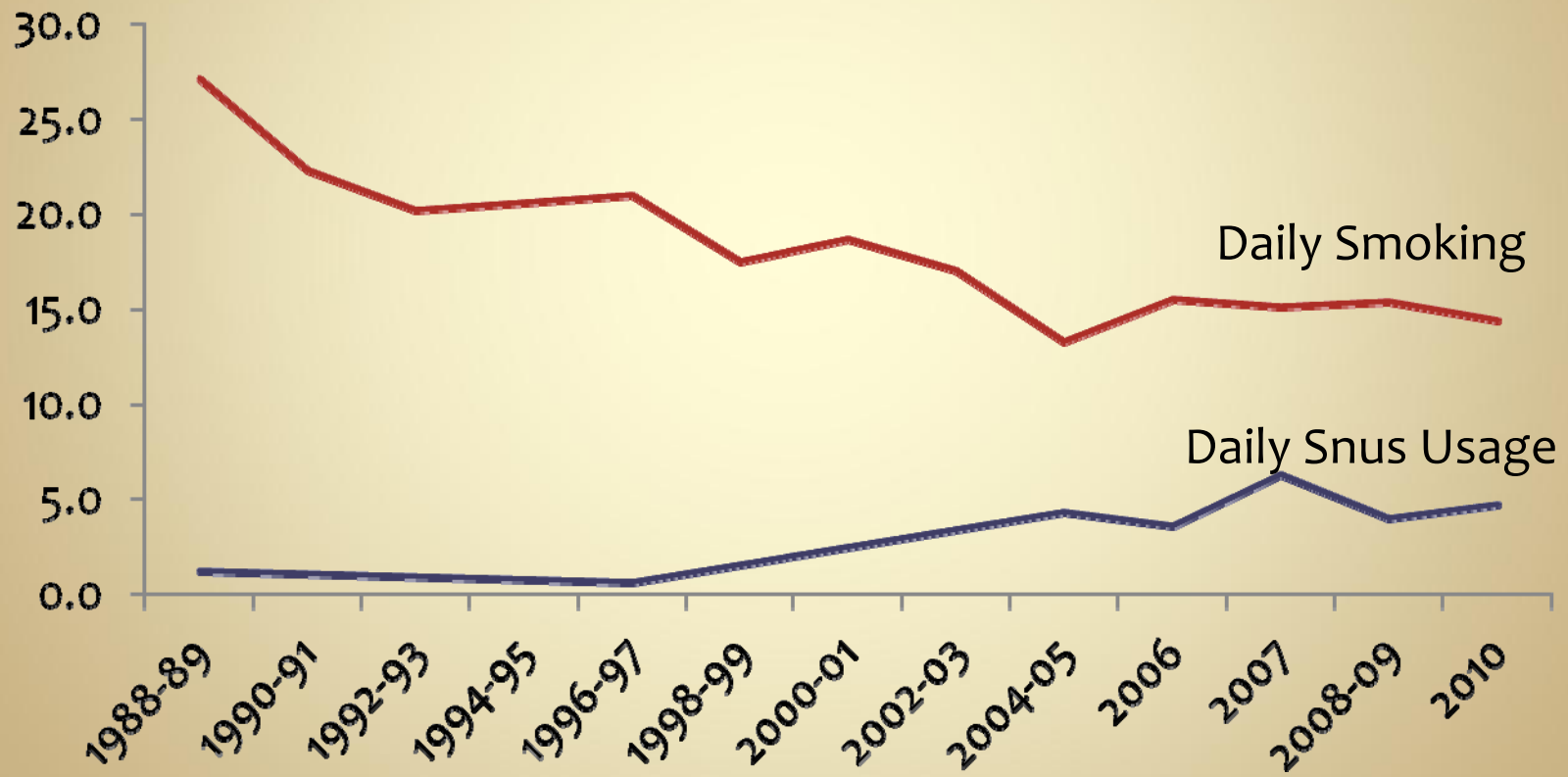
- Hypothesis: If ST use prevents smoking, increased ST use would be associated with decreased proportion of persons <25 years old who currently smoked
- Supportable assumptions
 - Nearly all tobacco initiation in developed countries occurs by early adulthood
 - Very little tobacco cessation occurs among adolescent and young adult regular users
 - Trends in prevalence of current use by adolescents and young adults reflects trends in initiation rates

Percentage of males age 16-24 who smoked or used snus daily Sweden, 1988-2010



Statistics Sweden (SCB). ULF surveys.

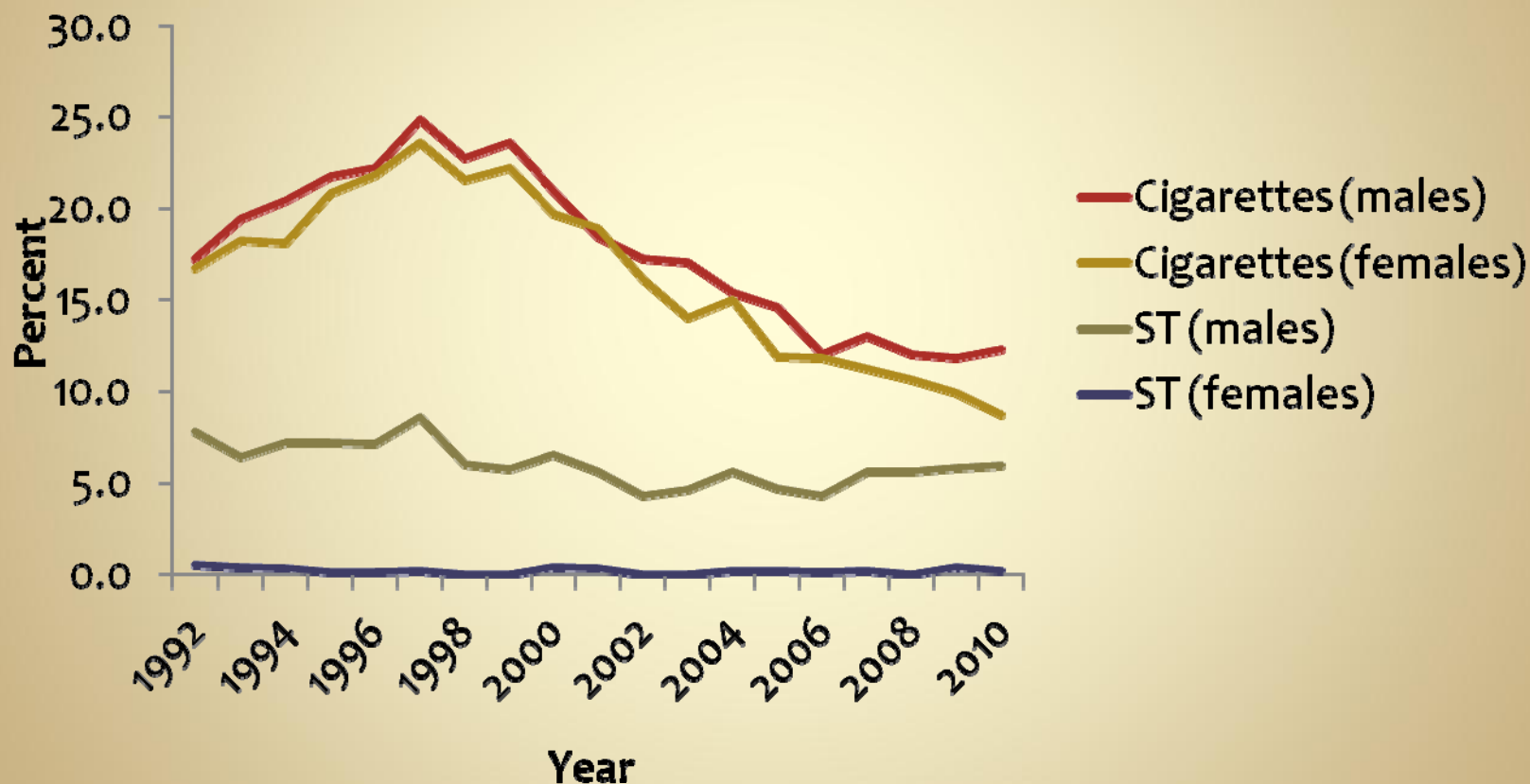
Percentage of females age 16-24 who smoked or used snus daily Sweden, 1988-2010



Statistics Sweden (SCB). ULF surveys.

Daily ST Use or Smoking among U.S. High School Seniors

Monitoring the Future Project, 1992-2010



* Used in preceding 30 days

Johnston, O'Malley, Bachman, & Schulenberg (2011)

Efficacy of ST use for Smoking Cessation

- 3 known randomized clinical trials (RCTs)
- Hypothesis: If ST is effective treatment or substitute for smoking, would expect to see higher quit rates in ST group than control group in RCTs

Randomized clinical trials on ST as smoking cessation aid (1)

- Tønnesen et al. (2008)*. Denmark, n = 263
 - Randomized, open-label, Oliver Twist pellet + group counseling vs. group counseling alone
 - 6-month point prevalence abstinence:
 - ST+counseling 23.1%, counseling alone 20.8%, OR=1.31, p = .371
 - 6-month continuous abstinence:
 - 11.9% vs. 8.3%, OR = 1.48, p = .344



*Nicotine Tob Res. 2008;10(8):1365-72.

Randomized clinical trials on ST as smoking cessation aid (2)

- Fagerstrom et al. (2011)*. USA, n = 250
 - Randomized, double-blind, snus sachets vs. placebo satchets
 - 28-week point prevalence abstinence:
 - Snus 12.8%, placebo 7.2%, OR=1.9, p = .14
 - 28-week continuous abstinence:
 - Snus 4.0%, placebo 1.6%, OR = 2.5, p = .45

**Nicotine & Tobacco Res.* 2011 Oct 12 (online advance access)

Randomized clinical trials on ST as smoking cessation aid (3)

- Joksic et al. (2011)*. Serbia, n = 319
 - Randomized, double-blind, snus sachets vs. placebo sachets
 - 48-week point prevalence abstinence (1 week):
 - Snus 15.8%, placebo 9.3%, OR=1.9, p = .08
 - 48-week continuous abstinence:
 - Snus 5.7%, placebo 1.9%, OR = 3.3, p = .08
 - 48-week mean number of cigarettes per day:
 - Snus 7.6, placebo 8.6, p=NS

*Harm Reduction J. 2011;8:25

Partial Substitution of ST and Cigarettes

- Analysis of 2000 NHIS
- Adult smokers who used snuff only on some days did not differ from those who never used snuff in the mean number of cigarettes per day (19.3 vs. 18.4; $p=0.42$)
- Those who used snuff every day smoked, on average, significantly fewer cigarettes per day (11.4 vs. 18.4; $p=0.0001$).

Table 5 Mean number of cigarettes smoked per day and mean serum cotinine level among male daily cigarette smokers* aged 20 years or older, by smokeless tobacco use status

Smokeless tobacco use	Unweighted sample size	Cigarettes per day		Serum cotinine (ng/ml)	
		Mean	SE	Mean	SE
Every day	11	17.06	3.79	344.20‡	40.02
Some days	22	17.75	1.62	215.79	22.69
Former	32	22.69†	1.70	276.74	22.54
Never	761	17.50	0.57	241.51	4.90
Total	826	17.73	0.51	244.72	4.51

National Health and Nutrition Examination Survey, 1999–2006.

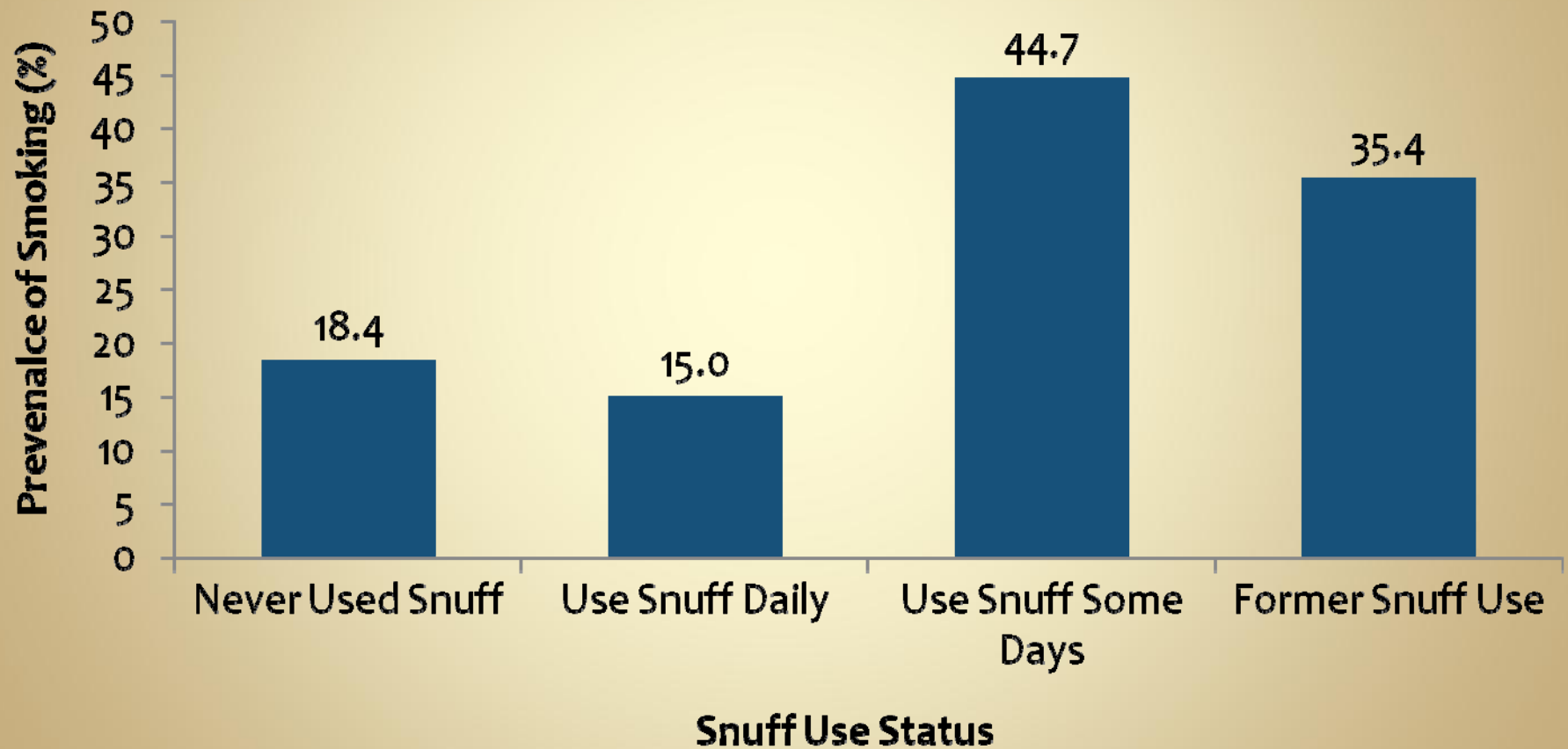
*Excludes persons using cigars, pipes, or nicotine replacement pharmacotherapy.

†Significantly greater than some day smokeless tobacco use or never used smokeless tobacco ($p \leq 0.006$).

‡Significantly greater than some day smokeless tobacco use ($p = 0.01$) or never used smokeless tobacco ($p = 0.02$).

Dual Use of Cigarettes and Snuff

Males Age 25+, United States, 2006-07



Tobacco Use Harm Reduction, Elimination, and Escalation in a Large Military Cohort*

- Evaluated changing patterns of tobacco use following forced abstinence in cohort of airmen (n=5,225) in control arm of RCT
- 12-month follow-up
- Baseline smokers (n=1751) more likely to become dual users (5.6%) than to switch to ST only (0.9%)
- Baseline dual users (n=249) had:
 - lowest rate of tobacco nonuse (20.5%) at follow-up
 - larger proportion became cigarette smokers only (42.2%) than maintained dual use (25.3%) or used only ST (12.0%)

*Klesges et al. *Am J Public Health* 2010;100(12):2487-92

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Meet CYNTHIA:

OUR TOBACCO EXPERT EXTRAORDINAIRE
Not just a resident tobacco expert... but also a fan

What's it like to be part of the next evolution in tobacco innovation? Cynthia Stokes can offer a taste. Literally. Cynthia's part of the R.J. Reynolds Research & Development team that created Camel Dissolvables—tasty, micro-milled tobacco with a refreshing hint of mint flavor.

Made in part from essential oils of the mint plant, Camel Dissolvables are an artful blend of premium tobacco and refreshing mint.

"Our passion and dedication stand behind these products," Cynthia says.

But she's not just an expert, she's also a fan, who—like a growing number of in-the-know adult tobacco consumers—has discovered how well Camel Dissolvables fit into her lifestyle.

"I like to keep the Variety Pack in my car," she says, "or just handy in my purse. Then my options are always open."

Like many adult tobacco consumers we've talked to, Cynthia enjoys the "anytime, anywhere" benefit of Camel Dissolvables.

"It gives me control of my time," she says. "I like that I don't have to adjust my schedule to enjoy Dissolvables."

**IT'S AS SIMPLE AS THAT—
AND WE THINK YOU JUST MIGHT AGREE.**



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Conclusions

- No evidence for ST use preventing smoking initiation
- Small and non-statistically-significant efficacy of snus/tobacco pellets as smoking cessation method
- Substantial prevalence of smoking among snuff users
- ST more consistently associated with partial substitution and dual use than complete substitution for cigarettes
- New U.S. dissolvables and snus already promoted for situational substitution of smoking
- Weak and inconsistent evidence for ST promotion as a public health strategy for harm reduction